

## **Bibliography:**

### **Links:**

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The Golden Spike National Historic Monument

<http://www.ourdocuments.gov>

Us National Archives, printer friendly version of the Pacific Railway Act

[http://freepages.books.rootsweb.com/~cooverfamily/pottawattamie\\_2/pot\\_2\\_2.htm](http://freepages.books.rootsweb.com/~cooverfamily/pottawattamie_2/pot_2_2.htm)

History of Pottawattamie County

<http://memory.loc.gov/ammem/gmdhtml/rrhtml/rrhome.html>

Railroad map collection

[http://www.pbs.org/wgbh/amex/tcrr/peopleevents/p\\_durant.html](http://www.pbs.org/wgbh/amex/tcrr/peopleevents/p_durant.html)

About Thomas Durant, first President of Union Pacific Railroad

[http://libr.unl.edu:2000/westward\\_through\\_nebraska/index.html](http://libr.unl.edu:2000/westward_through_nebraska/index.html)

**GUIDE TO THE UNION PACIFIC RAILROAD LANDS**

Union Pacific Railroad Company, 1870

**THE UNION PACIFIC RAILROAD: A TRIP ACROSS THE NORTH AMERICAN  
CONTINENT FROM OMAHA TO OGDEN**

Nelson's Pictorial Guide-Books, 1871

<http://cpr.org/Museum/Chinese.html>

Central Pacific Railroad Museum has great online primary sources for research.

[http://cpr.org/Museum/When\\_RRs\\_Were\\_New.html](http://cpr.org/Museum/When_RRs_Were_New.html)

Discussion of Tribes and the Railroad

<http://www.cdphheritage.org/exhibit/westernTrails/native/index.cfm>

Western trails discussion of Native American objects, treaties, etc

<http://www.snowwowl.com/mapcontents.html>

Great resource for Native American language and cultural groups.

<http://www.kstrom.net/isk/maps/mapmenu.html>

This link has excellent maps showing pre-contact housing and population distribution

<http://www.ldeo.columbia.edu/res/div/ocp/drought/nineteenth.shtml>

Speaking about the impact of drought and settlement on the Bison and Native American populations of the Great Plains

<http://www.sierrasun.com/article/20060704/LIFE/60703005>

Talks about how author, Robert Louis Stevenson, made the Transcontinental trip in 1879, through Council Bluffs, IA

[http://etext.library.adelaide.edu.au/s/stevenson/robert\\_louis/s848ap/index.html](http://etext.library.adelaide.edu.au/s/stevenson/robert_louis/s848ap/index.html)

The Complete text of Robert Louis Stevenson's journey in "*Across the Plains*"

[www.linecamp.com](http://www.linecamp.com)

A great discussion on train robbers. An aftereffect of westward immigration.

**Books :**

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Bain, David, Howard. *The Old Iron Road: an Epic of Rails, Rods and the Urge to go West*. New York: Viking. 2004

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Williams, John Hoyt, *A Great Shining Road: The Epic Story of the Transcontinental Railroad*, New York: Times Books, 1988.

## **Economic**

The Pacific Railway Act of 1862 mandated that a telegraph line be built along side the railroad. These laws also granted rights of way and use of building materials to be issued to railroad companies as follows: \$16,000 for every mile of track laid on flatlands, \$32,000 per mile of track laid in the foothills and \$48,000 for every mile of track laid in the mountains to companies that would build the transcontinental railroad and its feeder lines. The varying amounts were supposed to account for the greater degree of difficulty presented by mountainous terrain. This money was not a gift, however, and had to be repaid in 30 years at the rate of 6% per year.

The charters awarded to the railroads provided rights of way and use of stone and timber to build the roadbed, and granted 10 square miles of land for each mile of railroad built. This was increased in the 1864 Pacific Railway Act to 20 square miles of land per mile. This land was the railroads to sell and use as needed to generate the money needed to finish the Railroad. Based on the estimates made after the surveys, the government agreed to provide nearly half the needed capital for the project, about *60 million dollars*. More than 50 million dollars would have to be raised from private investors.

To create this rail line, an enormous amount of tools, materials and supplies were required. Each mile of track required 100 tons of rail, about 2,500 ties and two or three tons of spikes and fish plates (metal pieces that joined the rails and prevented climatic expansion and contraction of the metal). Some of the tools needed included

wheelbarrows, horse drawn scrapers, two-wheel dump carts, shovels, axes, crowbars, blasting powder, quarry tools and iron rods. On top of that, locomotives, wheel trucks, switch mechanisms and foundry tools were needed as well. Providing these supplies was no small challenge economically as well as environmentally.

Crédit Mobilier was one of the largest scandals in Congressional history. Then President of Union Pacific, Thomas Durant paid an associate, Herbert M. Hoxie, to submit a construction bid to the Union Pacific. Durant's attorney drafted Hoxie's proposal, which the Union Pacific board then approved under Durant's leadership. Hoxie handed over the contract to Durant, who transferred it to another company, the Crédit Mobilier. Having established himself as contractor, Durant was free to divert Union Pacific finances to his gain. It mattered little whether construction ever got underway, but each mile completed represented additional government subsidies.

There were many other opportunities for far thinking individuals to “get rich” while working on the railroad. As he led survey parties westward, General Dodge, Chief Engineer for Union Pacific, planted division points and divided the land into lots. When the graders -- and then the work crews -- approached behind him, these spots quickly transformed themselves into towns. Coincidentally, Dodge himself owned several of these plots of land.

**Primary sources available:**

*Pacific Railway Act (online, or copy)*

*Food invoice for UP crews building the Railroad (UP archives)*

*General Dodge's Autobiography (Dodge House and Council Bluffs Public Library)*

*Credit Mobilier- UP archives and Dodge's autobiography*

## Environmental:

By the middle of the Nineteenth Century the Plains were already feeling the impact of ever larger numbers of humans. In the preceding decades Native American populations had increased as they moved onto the Plains in the face of the westward expansion of European settlement. This transition was largely made during an unusually wet period when grasses were high, bison abundant, and a switch to a horse and hunting-based lifestyle seemed viable. All of that changed in the late 1850's when the region entered into a prolonged period of drought. At this time, European emigrants were heading across the Plains bound for the West accompanied by large numbers of horses, mules and oxen. During drought the bison would move to the river valleys where grasses would still survive. But these valleys now also were home to Indian camps, the emigrants headed West and their animals, and all for the same reason; water. This, coupled with the transcontinental railroad, and the potential for even greater numbers of settlers competing for the same natural resources, caused on going conflict between these groups.

The physical construction of the rail line was a job with an enormous geographic scope as well, and it was often a painfully slow process because of important geographic features. Construction crews had to cut grade, build snow sheds, blast through hard rock and lay track through snow. Deep fills, switchback routes, high trestles, huge rock cuts and

fifteen tunnels were necessary for the Central Pacific to make it over the Sierras. In addition to these daily environmental limitations, all supplies for the Central Pacific came from the East. All rails, rolling stock and machinery were shipped around Cape Horn on the southernmost tip of South America, en route to California. River steamers then took the material upriver to Sacramento, where it was offloaded to platform cars and hauled up into the mountains. This process could take up to 8 months! If a shipment didn't leave the East Coast on time (and this happened frequently) or if an accident occurred in the shipping, the resulting delay could create a great hardship.

Union Pacific's construction materials were sailed up the Missouri or brought in by wagon. Their biggest difficulty lay in getting railroad ties, since there were few natural trees in the Prairie and many had to be brought from forests and wooded areas many miles from track construction. Their route went largely through flat plains, following the Oregon Trail through the Platte Valley, then crossing the Continental Divide through the Black Hills in Wyoming.

**Primary sources available:**

*Building the UP, invoices (UP archives)*

*General Dodge's "How We Built the Union Pacific"*

*Dodge's autobiography*

*Central Pacific website*

*Geologic surveys, topographic maps, Lewis and Clark diaries*

## **Cultural**

The Sioux had once lived as far east as the Great Lakes region, but with the introduction of the horse into North America by the Spanish in Mexico, and the pressures of settlements on the east coast the Sioux moved into the Great Plains. In this new environment the Sioux thrived and became one of the fiercest, and feared, tribes in North America. The Sioux resented the intrusion of the railroad and felt that the "buffalo" or Bison, on which they depended for everything were leaving or being killed by white settlers and by the crews building the railroad.

In Nebraska, the Sioux and Cheyenne tribes continually harassed the Union Pacific construction crews. Forts were established along the line to protect the railroad from these attacks. When the workers weren't at work or asleep, they were at war with rifles at their sides, ready for the next attack. Sometimes the Native Americans fought the workers; other times, they damaged the progress made by the construction crews. In August 1867 at Plum Creek, Nebraska, the Cheyenne pried up some rails and caused the derailment of a supply train. The train crashed and the Cheyenne looted the cars.

The Central Pacific did not encounter conflict with Native Peoples, but had severe labor shortages that forced them to consider other sources for labor. The Central Pacific estimated that they needed 5,000 workers to build the railroad, but the most they ever had using only white labor was 800. At this time the gold rush was still going strong in the mountains of California and many men who signed up in San Francisco, quickly turned gold miner after reaching the hills. Central Pacific then hired Chinese workers, against the wishes of the other laborers and their foreman, but when the first group proved to be efficient and hardworking, the contractor recruited more Chinese from California and

China itself. It was these Chinese men, their sophisticated knowledge of gunpowder and back-breaking labor that would get the railroad through the Sierra Nevada Mountains.

Contributing to the cultural conflict in the west, railroads supported homesteading efforts in any way they could. European recruitment programs operated alongside ticket offices to find people who could immediately begin putting their considerable farming and ranching skills and experience to work. Railroads then offered inexpensive “house-seeker” tickets to allow people to get on and off of the train and view potential places to settle. This huge influx of people, only contributed to the environmental and cultural pressures plaguing the region.

**Primary sources available:**

*Central Pacific website, @ Chinese labor force*

*Union Pacific archives “Standing Bear”, photos and legal documents*

*National Archives, images and documents pertaining to Buffalo Soldiers, Sioux & Cheyenne and Army involvement on the Plains.*

## **Political**

Fully aware of the benefits such a railroad promised for trade with China and East India, Asa Whitney declared his intention to build a railroad from Lake Michigan through the South Pass to the Pacific, backed with a land grant 60 miles wide along the length of the road. Whitney brought his proposal to Congress in 1848, but it was voted down due to its unrealistic construction scheme. Another, better-prepared proposition was presented to Congress in 1850 and again in 1851, but it failed to earn sufficient support because of the conflicting interests between the Northern and Southern states.

In 1853, Congress passed an act providing for the survey of possible railroad lines from the Mississippi to the Pacific. At least five routes were surveyed, the Central Pacific Route by General Grenville Dodge, and each received support from a different sector of Congress. Unfortunately, the multitude of diverse interests among the supporters and an increasing rift between the North and the South rendered agreement on a route impossible. However, in 1862, with the Southern states out of the picture the major antagonism to the transcontinental railroad was gone, and both the Senate and House of Representatives were able to pass the Pacific Railroad Acts of 1862 and 1864 both signed into law by President Abraham Lincoln.

This land grant provision of the Pacific Railroad Act awarded Union Pacific and Central Pacific alternate one-square-mile blocks of land or “sections” for 20 miles on both sides of the main line with the government taking the alternate sections. This method of granting land created a “checkerboard” pattern following the railroad tracks. This land was the railroads’ to sell and use as needed to generate the money needed to finish and fund the Railroad.

This strategy allowed Congress to support the railroad’s construction and to encourage development of the vast lands acquired in the Mexican War and the Louisiana Purchase. Despite the remarkable wealth of natural resources in these areas, a lack of adequate transportation had prevented farmers, ranchers and industry from taking advantage of these regions. The railroad was the solution.

The Homestead Act of 1862 has been called one the most important pieces of Legislation in the history of the United States. Signed into law in 1862 by Abraham Lincoln after the secession of southern states, this Act turned over vast amounts of the public domain to private citizens. 270 millions acres, or 10% of the area of the United States was eventually claimed and settled under this act.

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